

Appl. No. 10/044,271
Amdt. Dated Oct. 31, 2005
Reply to Office Action of Sep. 14, 2005

Remarks

Claim Rejections Under 35 U.S.C. 102

Claims 1, 3 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,798,553 (Scobey et al.).

In response to these rejections, applicants have amended independent claim 1 by further defining the CTE of the substrate.

Regarding claim 1, the present invention is now recited as a method for making a thin film filter having a negative temperature drift coefficient, comprising the steps of: providing a film stack material; providing a *substrate wafer which has a coefficient of thermal expansion greater than that of the film stack material*; polishing the substrate wafer; depositing thin film layers made of the film stack material on the substrate wafer at a temperature substantially higher than room temperature, thereby creating a film stack on the substrate wafer; cooling the substrate wafer-film stack laminate to room temperature; and cutting the cooled substrate wafer-film stack laminate into pieces, *wherein the coefficient of thermal expansion of the substrate wafer is more than $10 \times 10^{-6} / ^\circ K$, and less than or equal to $20 \times 10^{-6} / ^\circ K$* . Scobey teaches a method for manufacturing an optical filter by providing a substrate, and a film stack on the substrate. However, Scobey fails to teach that the *substrate wafer has a coefficient of thermal expansion greater than that of the film stack material*. Moreover, it is only when the substrate has a coefficient of thermal expansion greater than that of

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the film stack material, that a thin film filter having a negative temperature drift can be obtained. Scobey does NOT specifically indicate that its optical filter has a negative temperature drift. Furthermore, Scobey teaches a substrate wafer of glass, indium phosphide, silica, or a silicon wafer (col. 6, lines 21-23). The substrate material is an ordinary glass material, and the coefficient of thermal expansion of ordinary glass material which Scobey teaches is within the range of from $6 \times 10^{-6}/^{\circ}\text{K}$ to $10 \times 10^{-6}/^{\circ}\text{K}$. Applicants respectfully traverse Examiner's statement in the Office action to the effect that the materials of Scobey are the same as those claimed in the present application, and that Scobey's materials are expected to exhibit the same CTE properties as those claimed in the present application. Scobey fails to teach that the coefficient of thermal expansion of the substrate is greater than that of ordinary glass material. In contrast, the coefficient of thermal expansion of the substrate of the present invention is greater than that of ordinary glass material; in particular, such coefficient is more than $10 \times 10^{-6}/^{\circ}\text{K}$, and less than or equal to $20 \times 10^{-6}/^{\circ}\text{K}$. Applicants assert that the method of the present invention is clearly different from that of Scobey, and that claim 1 is novel over this reference.

Further, applicants submit that the above-described distinguishing feature of claim 1 renders the claim unobvious and patentable under 35 U.S.C. 103 over Scobey.

Accordingly, dependent claims 3 and 9-10, which depend directly from claim 1, are submitted to also be novel, unobvious and patentable under 35 U.S.C. 102 & 103 over Scobey.

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Claim Rejections Under 35 U.S.C. 103

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scobey as applied to claim 1 above.

Claim 1 is asserted to be unobvious and patentable under s.103 over Scobey, as detailed above. Accordingly, claim 8 should be also unobvious and patentable under s.103 over Scobey, since it depends directly from claim 1.

Allowable Subject Matter

Applicants acknowledge Examiner's remarks. However, applicants assert that amended claim 1 is allowable, as detailed above.

In view of the above claim amendments and remarks, the subject application is believed to be in a condition for allowance, and an action to such effect is earnestly solicited.

Respectfully submitted,
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